

TAGETES ERNSTII (TAGETEAE: ASTERACEAE), A NEW SPECIES

FROM OAXACA, MEXICO

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The most recent major work on the genus Tagetes is an unpublished thesis (Neher, 1965, University of Indiana) which recognized 40 species. Study of the Neher keys and descriptions and review of specimens in the U. S. National Herbarium (US) convinces us that a collection, W. R. Ernst 2219 (Fig. 1) from Oaxaca, represents a new species.

The unique feature of the new species is the heteromorphic pappus with partial or complete fusion of squamae. The pappus may be interrupted by one or two subulate squamae or by a single division but it often is completely undivided, forming a continuous sheath around the base of the corolla (Fig. 2). This completely fused and truncated pappus is characteristic of the inner disk flowers. Outer disk flowers usually have one subulate squama, sometimes two. Ray flowers usually have two subulate squamae.

The only two species of Tagetes reported (Neher, 1965) as lacking subulate squamae in either the disk or ray flowers are T. linifolia Seaton and T. hartwegii Greenman, both of Mexico. In T. linifolia the ray flowers lack subulate squamae and the disk flowers have them, just the opposite of the new species. In T. hartwegii the disk flowers have the unique character of typically being completely epappiferous. The new species also differs from T. linifolia and T. hartwegii by having upper leaves more often alternate, in having branches bearing several heads, and in having strikingly smaller ray corollas (6-8 mm long vs. 10-16 mm). Both T. linifolia and T. hartwegii are known only from their type localities, T. linifolia from Esperanza on Mt. Orizaba, Puebla, and T. hartwegii from the Bolaños Valley in northern Jalisco.

If one emphasizes the size of ligules, as Neher (1965) did by making it the opening character in his key to the subgenus Tagetes, the new species would seem most similar to T. jalis-censis Greenman which is distributed from northern Mexico to Costa Rica. This species differs not only in having the pappus of all flowers with subulate squamae, but in having a more fusiform involucre, fewer disk flowers (only 10-12 vs. 25), larger achenes (8-10 mm long vs. 5-7 mm), and shorter peduncles (2-4 cm long vs. 5.0-7.5 cm).

We name the new species in honor of the collector, Wallace

Roy Ernst, our former colleague (cf. Thomas & Shetler, 1973). This new species was found in the process of identifying, labelling and distributing the materials from Dr. Ernst's collecting trip to Oaxaca in January-February, 1966.

Tagetes ernstii H. Robinson & D. H. Nicolson, species nova.

Plantae suffrutescentes usque ad 0.7 m altae, perennes (?) plerumque glabrae. Caules teretes vel leniter sexangulares. Caules majores et rhachides foliorum pilis minutis perbrevis uniseriatis pauciseptatis eglandulosis sparse obsiti. Folia inferiora opposita superiora alternata profunde pinnatifida plerumque 3-5 cm longa, pinnis plerumque oppositis utrinque 3-5 anguste ellipticis 7-15 mm longis et 1.5-3.0 mm latis argute serratis apice breviter acuminatis margine inter dentes prominente uniglandulopunctatis, punctis minoribus interioribus in pinnis majoribus. Inflorescentia corymbosa, pedunculis elongatis 5.0-7.5 cm longis inferne pauce bracteatis superne glabris sub involucri sensim distincte incrassatis, bracteis subbasalaribus 0.5-1.2 cm longis pectinatis vel pinnatis aristiferis. Involucri late fusiformia vel cylindrica 1.3-1.5 cm longa ca. 3.5 mm lata 5-lobata, lobis ca. 1.5 mm longis latioribus quam longioribus apice breviter acutis, punctis glandulosis in valvis omnino biseriatis inferne elongatis ad 1 mm longis. Flores ca. 30, radiis 5; corollae radiorum 6-8 mm longae aurantiacae, tubis 3-4 mm longis, limbis subquadratis leniter bilobatis 3-4 mm longis et latis. Flores disci ca. 25; corollae 6.5-8.0 mm longae superne rufescentes extus glabrae, lobis linearibus ad 2.5 mm longis margine et intus setiferis; filamenta in parte superiore 0.6-0.7 mm longis; thecae ca. 1.8 mm longae; appendices antherarum ca. 0.4 mm longae et 0.15 mm latae. Achaenia subfusiformia 5-7 mm longa superne 0.5-0.7 mm lata plerumque in costis minute setifera; carpodia minuta; squamae pappi 1-3 in floribus radiis 1-2 subulatae 6-7 mm longae, in floribus disci plerumque 0-1 subulatae, squamis brevioribus 2.5-3.5 mm longis omnino 1 saepe integris indivisis apice vix lobatis minute scabrellis extus sparse scabrellis. Grana pollinis 25-27 μ in diametro.

MEXICO: Oaxaca: near San Lorenzo, northeast of Mitla, pine-oak-manzanita woodland, rays orange, disc brown, 19 January 1966, W. R. Ernst 2219 (Holotype: US-2725920; Isotypes: to be distributed).

Literature Cited

- Neher, R. T. 1965. Monograph of the genus *Tagetes* (Compositae). 306pp. Ph.D. Thesis, Indiana University, Bloomington.
- Thomas, J. H. and Shetler, S. G. 1973. Wallace Roy Ernst, 1928-1971. *Madroño* 22: 207-213.



2725920

NATIONAL HERBARIUM

Figure 1. Tagetes ernstii Robinson & Nicolson, Holotype, United States National Herbarium. Photo by Victor E. Krantz, Staff Photographer, National Museum of Natural History.



Figure 2. Heads and achenes from the holotype of Tagetes ernstii, the achenes with pappus squamae united, fused and truncate or with 1 or 2 subulate squamae.